



April 2019

# PSE&G ELECTRIC RELIABILITY IMPROVEMENTS

## UTILITY INFRASTRUCTURE UPGRADES

### IN WESTFIELD

#### ABOUT THIS PROJECT

##### **What are 69,000-volt (69 kV) electric lines?**

69kV electric lines are the standard of the 21st century. They will ultimately replace and enhance a 50+ year-old system built on 26kV lines, increasing reliability, capacity and safety.

##### **What will these projects do?**

PSE&G is currently improving its electric reliability statewide by upgrading its utility infrastructure. These infrastructure upgrades include the addition of a 69kV network that will alleviate the demand on the existing 26kV network. These upgrades will increase electric service reliability and system redundancy to ensure safe and reliable electric service to our customers.

Since 2007, PSE&G has installed more than 400 miles of 69,000-volt (69kV) lines in more than 93 municipalities in New Jersey. By the end of 2023, we anticipate that 570 miles will have been upgraded.

##### **Why are these upgrades needed?**

These upgrades are needed to address the demand for electric reliability throughout PSE&G's service territory. As populations have increased and consumer electronic needs have evolved, the 26kV legacy networks of the last century have been taxed. The addition of a 69kV network will alleviate the demands on the existing 26kV network.

##### **Is this project approved?**

PSE&G is charged with providing safe, adequate and proper electric service to its customers, as well as upgrading the system as needed for reliable service. In the

course of fulfilling those obligations, PSE&G regularly conducts system upgrades and improvements.

This project was approved and assigned to PSE&G by PJM Interconnection LLC (PJM) as a baseline reliability project in October 2017. PJM is the regional grid operator for 13 states in our region. This baseline project is required to maintain system reliability.

PSE&G, as a New Jersey public utility required to provide safe, adequate and reliable service throughout its service territory, has the legal authority right to occupy the public right-of-way with electric and gas facilities without obtaining state or local approvals. The authority for the construction and maintenance of utility poles along public streets in New Jersey is governed by statutory authority in Title 48, and is not subject to the jurisdiction of local boards.

### **What is the difference between the existing and new line voltage?**

Existing pole lines throughout Westfield carry 4kV, 13kV or 26kV lines. The replacement pole line will carry the existing lines plus a new 69kV line for added reliability and capacity, as well as lightning protection.

### **What substations provide power to Westfield residents and businesses?**

Westfield is served by 10 substations throughout Union and Middlesex Counties. This project will enhance the reliability at several of these substations that provide power to Westfield.

## **CONSTRUCTION**

### **What is the route for this project in Westfield, and how was it chosen?**

The project will follow an existing pole line on South Avenue in Westfield. PSE&G considers many factors in its pole line selection process, including presence of existing utilities; feasibility of engineering and construction; use of public and private property; environmental impacts; cost; construction schedule; feasibility of long-term maintenance; and accessibility.

### **Why can't you build this line along the railroad tracks?**

This route was studied and determined to not be feasible. PSE&G needs access to its electric lines 24/7 to respond to equipment failures and power outages. Building along the railroad, instead of the utility right-of-way, would create accessibility issues that would interfere with PSE&G's ability to maintain reliable electric service to our customers.

**How long will the project take to complete? When will it start?**

This project will take six to eight months to complete. Our initial start date was expected to be March 2019. The new start date is yet to be determined.

**How many residents and businesses are along this route?**

There are about 50 residential properties, as well as about 125 businesses.

**How many poles will be installed? How tall are they, and how far apart?**

The project will replace 82 poles on an existing pole line. In general, the length of the existing poles is between 45 and 50 feet (38 and 43 feet above ground). The replacement poles will range between 65 and 70 feet in length (56 and 61 feet above ground). The new poles will have the same spacing as the existing poles.

**Are the poles on the north or south side of South Avenue?**

From the Scotch Plains border to Central Avenue, the pole line will be on the southern side of South Avenue. From Central Avenue to the Garwood border, the pole line will be on the northern side of South Avenue.

**Why are the replacement poles taller?**

The height of a utility pole is determined by several factors.

- The number of wires carried by the pole – the more wire, the taller the pole.
- The voltage of the wires -- different voltages require different spacing between the wires.
- The addition of static wire, also known as lightning protection. This project involves installing both a 69kV line and lightning protection on the new poles.

**Why do the replacement poles appear twice as high as the old poles?**

Once a replacement pole is installed and the electric wires are transferred, the old pole is shortened to the height of the lower telephone and/or cable television lines that share the pole. As a result, the public sees the new pole next to an old pole that is much shorter than it had been, at a new height of just 20 to 25 feet above the ground.

**When will the old poles be removed?**

The old poles will be removed by the phone and cable companies once they transfer their wires onto the new pole lines.

**Why aren't you building this project underground?**

Building utility lines underground is six to seven times more expensive than typical utility pole construction. PSE&G is an overhead utility, meaning that power lines are built overhead where feasible. Of the more than 400 miles of 69kV lines PSE&G has built since 2007, the vast majority are overhead. Lines are built underground only when engineering determines it's necessary, such as for railroad or river crossings. If our engineering indicates that overhead construction is feasible, but a municipality requests that a line is put underground, the municipality is required to pay for the incremental costs.

**How will you minimize disruption to businesses along South Avenue during construction? Will traffic be disrupted?**

PSE&G will work with municipal officials to minimize any disruptions and coordinate traffic flow during construction. We will also communicate any disruptions directly with impacted customers.

**Why is PSE&G trimming and removing trees near the new poles? How many trees will be affected, and where?**

The NJ Board of Public Utilities (BPU) and prudent utility practice mandate that PSE&G remove tree branches and limbs to ensure that they do not become entangled with, or damage, the electric lines. This regular vegetation management minimizes power outages. An estimated 24 trees along this route will be trimmed, and another 24 will be removed. All trees that are removed will be replaced with new utility-friendly trees. Most of the affected trees are on municipal property, with an estimated 19 on private property that encroach on the public right of way.

**Why is this project proceeding when the proposed substation in Cranford has not been built yet?**

The proposed station in Cranford is not a part of this project. The line now being built is required by PJM, the regional grid operator, and was approved in October 2017. The line will connect PSE&G's Front Street substation in Scotch Plains with its Springfield Road substation in Union. The station planned in Cranford was not a part of this project, and was reviewed by PJM in January 2019.

**SAFETY**

**Are there any health hazards associated with 69 kV lines?**

There is no documented evidence that utility lines pose a health risk. Electric lines of various voltages can be found on almost every roadway in New Jersey, as well as throughout North America.

**Can you explain the impact of electromagnetic fields (EMFs)? Is there a difference between EMFs on 26 kV and 69 kV lines?**

The existing 4 kV and 13 kV lines along South Avenue carry currents that are comparable to the 26 kV and 69 kV lines, and produce similar magnetic fields. All of the lines produce magnetic field levels at the surrounding properties that range from 2 to 4 milligauss, which are comparable to existing background levels created by building wiring, lighting and appliances.

Electric and magnetic fields are created by any device that produces, carries or uses electrical energy. The magnetic field produced by a three-phase power line depends on the current in the conductors, the spacing between the conductors and the distance from the power line. Voltage of the line has no effect on the magnetic field.

The National Institute of Environmental Health Sciences (NIEHS) has estimated the average level of background magnetic fields range from 0.5 to 5.0 milligauss (mG) in most homes. The New Jersey Department of Environmental Protection (NJDEP) also lists typical magnetic field levels measured six inches away from common appliances. The NJDEP list includes:

- Hair dryer - 300 milligauss
- Electric shaver - 100 milligauss
- Blender - 70 milligauss
- Can opener - 600 milligauss
- Coffee maker - 7 milligauss
- Microwave oven - 200 milligauss
- Color TV (1 foot away) - 7 milligauss

**Are 69 kV lines a concern for firefighters who respond to downed electric wires or transformer fires?**

Firefighters who respond to this type of situation are trained in safety around electric wires and equipment. Firefighters and police personnel will secure the area, maintain crowd and traffic control and await response by PSE&G. This upgrade poses no additional hazards to first responders. In fact, the 69-kV equipment is much more storm-resistant. The new sturdier poles, fiber optic communications wire and upgraded relay protection all serve to minimize faults or problems on the line and allow for quicker restoration if there are outages.

\*\*\*\*\*

*PSE&G will continue to provide updates to Westfield officials on this important reliability upgrade project as information becomes available. In the meantime, should you have additional questions or concerns about this project, please contact PSE&G's Project Hotline at 800-901-5035. All calls will be returned within 24 hours during normal business days.*